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PAPERS

IN

AGRICULTURE.

AGRICULTURE.

THE following Accounts and Certificates having been received, the GOLD MEDAL, being the firſt Premium offered for raiſing OAKS from ACORNS, ſown or planted between the firſt of October, 1793, and the firſt of April, 1794, was this year adjudged to SAMUEL KILDERBEE, of Ipſwich, Eſq.

SIR,

I HEREBY acquaint you, that, in the month of November, 1793, I planted ten acres of land with Acorns, of which the incloſed is a Certificate.

The plantation was made upon a farm in the pariſh of Great Glemham, in this county. The land planted, meaſures ten acres and ten perches; the quality of it is a dark grey looſe mould, about four or five inches deep, which in this country is called a Woodcock Soil, and lies upon a ſtrong wet clay. A ſimilar ſoil prevails in in the adjoining fields, where Oaks are free growers.

In the year 1791, the field planted was in graſs, and rented upon an average, with others of the ſame ſort, at eight or nine ſhillings an acre.

In 1792, it was broken up and ſown with oats: in 1793, it was ploughed, harrowed, and rolled at various times, and made a perfect, clean, ſummer fallow: in the autumn of the ſame year, it was ſown with wheat upon a broad ſtetch; but before the wheat was ſown, aſhen keys and white-thorn berries, of a year old, with a ſmall quantity of whin ſeeds, were thrown upon the ground, and afterwards harrowed in; and in the November following, three rows of Acorns were dibbled in upon each ſtetch, and the holes filled up by a perſon who followed the dibbler with a hoe for that purpoſe.

At the time of dibbling-in the Acorns, the graſs of the wheat had, in part, covered the ground. The Acorns were ſet at about eight or nine inches diſtance in length, and about twelve in breadth of the ſtetch from each other. The aſhen keys, white-thorn berries, and whin ſeeds, were ſown with a deſign to protect and nurſe up the produce of the Acorns, and prevent their being deſtroyed by hares or rabbits. The Acorns have produced a ſufficient number of plants, of which I had deſpaired, as they were not of the beſt quality (though the beſt that could be procured); and as the drought of the ſpring proved very ſevere, the plants are ſmall, but look healthy and well.

I was induced to ſow wheat upon the field alluded to, becauſe, in the autumn of the year 1780 or 1781, I planted a piece of land of five acres with Acorns and aſhen keys, without ſowing wheat or any other ſeeds, and a total failure took place. This piece had been long in plough tilth, and is of a better quality than that planted in the laſt autumn: it was previouſly made clean by proper culture; but neither Acorns nor aſhen keys ſucceeded; for the mice deſtroyed the greateſt part of the former, and the latter, having no ſhelter to protect them from the rays of the ſun, were burnt up in the following ſummer. This field was not planted again until the year 1785; but by the autumn of that year it was in good condition for the reception of wheat, and then ſowed with that grain upon a broad ſtetch. After the wheat was well up, Acorns were dibbled in, but no other ſeeds were thrown over the ground previous to it: the Acorns ſucceeded to my wiſhes; a great number of young Oaks appeared; and when the wheat was ripe, the reapers were ordered to leave the ſtubble high for their protection and defence. The wheat crop cleared upwards of thirty-five pounds, and the plantation looks thrifty and well.

The ſucceſs I had in this plantation, encouraged me to purſue a like method with that made laſt autumn, that is, by ſowing the land with wheat, before the Acorns were dibbled in, as in the above inſtance I had moſt ſatisfactorily experienced the good effect of ſuch a caution: and to guard againſt injury from the bite of hares and rabbits, aſhen keys and white-thorn berries, with a few whin ſeeds, (as I have mentioned) were previouſly thrown over the ground. In this caſe, I gave the tenant the wheat crop for tilling the ground, and he will be amply recompenced by it.

Some years ſince, I trenched a ſmall piece of ground two ſpits deep, in a ſoil like that planted in the laſt autumn; it was afterwards ſet with Acorns, without adding any other ſeeds: the Acorns quickly vegetated. I believe the ground was once or twice cleaned by the hoe. The plants grew in ſize and height far beyond thoſe which had been planted after common ploughings; and the ſtate they are now in gives that mode, in my mind, a decided preference.

About the ſame time that the trenched piece of ground was planted, another ſmall piece, of a like quality, was broken up, and, the flag having been regularly turned with the graſs downward, ſet with Acorns. Theſe did not ſucceed ſo well as I expected: but ſuch plants as appeared, have not been ſlower in growth than thoſe produced upon land properly prepared for wheat, yet by no means equal to the growth of thoſe ſet upon the trenched piece of ground.

From the above experiments and obſervations, it appears to me, that the beſt method, and the moſt profitable in the end, of making plantations of Oak, is, by trenching ground a proper depth; and the next, that of dibbling in Acorns upon land ſown with wheat or rye: for I think the roots of corn are a check to the ſudden growth of weeds; the graſs of it tends to preſerve Acorns from mice, and the ſtubble, when left high, affords a neceſſary ſhelter, until a better comes forward.

To the planting of young Oaks from a nurſery, I have never attended, though the practice has frequently been recommended;

but I am inclined to believe, that no tree, which has a tap-root like the Oak, will do ſo well tranſplanted, as it will in the ſpot where the Acorn firſt vegetated and made its ſhoot.

In the year 1722, upon a farm near adjoining to that where the plantation was made in laſt autumn, three acres of land, of a Woodcock ſoil, were ſown with Acorns, and ploughed in: I believe no other ſeeds were ſown with them. To all appearance, a plentiful crop was the conſequence of it; but the trees were ſuffered to ſtand near forty years (much too long) before any were taken out: at that period I began to thin them, and continued it by degrees, until the laſt year. The quality of the land, upon which this plantation was made, has been conſidered, as to what may be ſuppoſed to have been its utmoſt annual value from time to time, as the value of land increaſed, to the preſent time, and an accumulated intereſt computed upon it: the profit received by thinning the Oaks, has alſo been calculated,

culated, and an accurate eſtimate of the value of thoſe now remaining has this autumn been made; and taking every attendant circumſtance into conſideration, I am induced to ſuppoſe, the produce in value to the landlords, from the year 1722 to the preſent time, has been equal to what the rent of the land, with an accumulated intereſt upon it, would have amounted to, had it been continued in the hands of a tenant in graſs or in plough tilth: and I am confident, that the value of the trees now left ſtanding is double to that of the inheritance of the ſoil, ſetting a full value upon it per acre, and calculating its price at twenty-eight years purchaſe.

I am preparing to plant another piece of land, of about eight acres, in the autumn of the next year; but as it is at a conſiderable diſtance, and I cannot conveniently inſpect the trenching ſo large a ſpot, though convinced of its utility, my deſign is, to purſue the mode obſerved in making the plantation in the autumn of the laſt year, unleſs the Society will be ſo obliging as to furniſh me with a better, reſulting from their extenſive and uſeful communications on the ſubject of planting: and wiſhing that this may convey ſome ſatisfactory information,

I remain, Sir,
Your obedient Servant,
SAMUEL KILDERBEE.

Ipſwich,
September 27, 1794.

Mr. SAMUEL MORE.

MR. DENNY is deſired to anſwer the following queſtions, as near to the truth as he can, reſpecting the planting of ten acres of land with Acorns, in the autumn of the year 1793, upon a farm belonging to Mr. KILDERBEE, in Great Glemham, in the county of Suffolk, and then and now in the occupation of Robert Berrett.

How many buſhels of Acorns were ſet upon an acre?

One buſhel and one peck.

How many Acorns do you ſuppoſe each buſhel contained?

Seven thouſand three hundred and ſixty.

How many young Oaks do you believe there are one each acre, could they be clearly ſeen and counted?

At leaſt five hundred.

Witneſs my hand, this ſecond day of December, one thouſand ſeven hundred and ninty-four,

JOHN DENNY.

Witneſs,

WILLIAM BROWNE, Rector of
Dallinghoe.

WE do hereby certify, that Mr. Samuel Kilderbee, of Ipſwich, the owner of a farm in Great Glemham, in the county of Suffolk, in the occupation of Robert Berrett, cauſed a piece of graſs land belonging thereto, of upwards of ten acres, to be fenced in and broken up:—that it was afterwards ſown with oats;—that by the autumn of the year 1793, it was made fit for the reception of wheat: that wheat was ſown on a broad ſtetch with aſhen keys, white-thorn berries, and a few whin ſeeds: that, ſoon after the ſowing thereof, (that is to ſay, in the month of December 1793) the whole field was ſet with Acorns, three rows upon a ſtetch, and dibbled-in after the manner of ſetting broad beans.

Witneſs our hands, this ninth day of Auguſt, 1794,

Robert Berrett, Occupier of the farm.

Wiilliam Downing, who dibbled the ground.

John Denny, who attended to the putting in of the Acorns, and who filled up the holes.

Several Accounts were this Seſſion produced in claim of the Premiums offered for PLANTATIONS of OSIERS: and the firſt Premium, TWENTY POUNDS, was adjudged to the Right Honourable LORD BROWNLOW; and TEN POUNDS, the ſecond Premium, to JOHN PHILLIPS, Eſq. But the Society, in due conſideration of the merit of the Paper ſent by SAMUEL CRAWLEY, Eſq. and the information contained therein on the ſubject of gaining Land from Rivers, and planting the ſame with OSIERS, have voted to him their SILVER MEDAL, as it is preſumed his communication on thoſe matters may prove of conſiderable advantage to the Public.

SIR,

MR. Samuel Edwards, of Stamford, Agent for the eſtates of the Right Honourable Lord Brownlow, near Stilton, in the county of Huntingdon, having informed us of his intentions to apply, on behalf of his Lordſhip, to the Society for the Encouragement of Arts, Manufactures, and Commerce, for the Premium offered by that Society to perſons planting Oſiers on their eſtates; and having deſired us to ſtate and certify the truth of certain facts relating to the Oſiers planted on Lord Brownlow's eſtate; we have therefore, in conſequence of ſuch application, troubled you with the following ſtatement.

Lord Brownlow is the proprietor of an eſtate in Farcett Fen, near Stilton, from part of which the moor or turf has lately been dug or taken out, in order to prepare the ground for planting of Oſiers; and about twenty-ſix acres, as near as we can judge, have been planted with Oſiers, the greateſt part whereof is in a very thriving ſtate. The principal part of the ground was planted in the winter and ſpring of the years 1793 and 1794: but as we are informed our ſtatement ſhould be confined more particularly to the Oſiers planted in 1794, we have directed our obſervations with greater attention to this part of the plantation; and we find that about one hundred and forty-five thouſand Oſier-ſets of different ſorts, (namely, the common Oſier and the new kind) with ſome other ſorts, were planted in the winter and ſpring 1794, upon the ſaid eſtate of Lord Brownlow, in certain places called Conqueſt Lands, and eight roods in Farcett Fen, upon different parcels of land, not exceeding twelve acres in the whole, after deducting dikes, grips, and other waſte land, as near as we can judge upon a view thereof, and from the ſurvey produced to us by William Todd, the reſident Agent of thoſe eſtates, and other information we have obtained. And we further beg leave to repreſent to you, that the laſt-mentioned Oſiers are in general in a very thriving ſtate, many of the ſhoots being upwards of eight feet long, and now fit for the uſe of baſket-makers, as we are informed.

THOMAS BIRD, Churchwarden.
WILLIAM EDIS, Overſeer of the Poor
of Farcett, near Stilton.

Farcett, near Stilton.
Nov. 10, 1794.
Mr. MORE.

I, William Todd, of Farcett, reſident Agent of the eſtate of the Right Hon. Lord Brownlow, near Stilton, do hereby declare that the foregoing ſtatement or certificate, under the hands of the above-named Thomas Bird and William Edis, is true; the whole buſineſs relating to the preparing the ground, purchaſing the Oſier ſets, and planting the ſame, having been under my management, ſubject to the directions of Mr. Samuel Edwards, of Stamford, the principal agent of the ſaid eſtate.

William Todd.

I, Samuel Edwards, of Stamford, in the county of Lincoln, Agent or Receiver of the Eſtates of the ſaid Lord Brownlow, near Stilton, do hereby declare that the foregoing ſtatement, ſigned by Thomas Bird and William Edis, the Church-warden and Overſeer of the Poor of Farcett, is true; the whole of the buſineſs relating to the preparing the ground and planting the Oſiers, as therein deſcribed, having been planted and directed by me,

SAMUEL EDWARDS.

SIR,

I RECEIVED yours of the 9th inſtant, reſpecting the Oſiers planted on the eſtate of Lord Brownlow, in Farcett Fen; and have refered to my books, where it plainly appears to me that nine acres of the twelve were planted between the firſt of January, and the firſt of May, 1794. If this ſhould not ſatisfy your inquiry, ſhall be ready to anſwer any future one (as far as I am able) that you, or the Society for Encouragement of Arts, may require; and am,

SIR,

Your very humble ſervant,

W. TODD.

Farcett,
Dec. 14, 1794.
Mr. MORE.

I Hereby certify, that, in the month of March laſt, at Kettleſworth, in the pariſh of Ely, in the county of Cambridge, I planted of Oſiers, fit for the uſe of baſket-makers, at the rate of between thirteen and fourteen thouſand ſets an acre, ſix acres, one rood, and thirty-five poles: and I further certify, that they have been well fenced, and are in a flouriſhing condition.

At Littleport, about two miles from my farm, there are conſiderable plantations of the ſame ſort. I frequently viſited them, with a view to my future experiments, and examined the ſoil very particularly; I found it to conſiſt chiefly of ſilth, or ſmall ſoft ſand mixed with a grey clay; and it has been ſuppoſed that they flouriſh beſt in that ſoil. There are at leaſt one hundred thouſand acres of land in the Fens which adjoin me, of black turf or peat, which upon an average are not worth each more than three ſhillings by the year: I have about one hundred acres of the ſame ſoil; and I thought it might be of great public advantage, if my experiments ſucceeded in growing Oſiers on land of ſo little value for any other purpoſe. I found that the land which I have planted is from two to ten feet deep of peat, with, in ſome places underneath it, a gravelly ſoil, and in others, a ſtrong blue clay fit for brickmaking. I firſt intended to plough, as the cheapeſt method of preparing the land; but I was adviſed, by my neighbours, to get it dug or ſpaded. I followed that advice, and the digging coſt me three pounds an acre; the plants coſt me, from ten to fifteen ſhilling a thouſand, and the ſetting of them came to ten ſhillings an acre. There were ſix different ſorts; but thoſe moſt in requeſt, and which ſeem to ſhoot longeſt, are what is called the *New Kind*, and the *Weſt-Country Spaniard*.

It is with difficulty the two latter can be obtained in the neighbourhood, as there are many jealous of my extending my plantations, and thereby reducing the price of Oſiers, and of conſequence leſſening the value of their plantations.—Where the peat was deepeſt, ſets of twenty-two inches were uſed, eight inches of which were left above ground; I ordered a few of fourteen inches long, ſeven inches of which were left above the ſurface of the land. The former flouriſhed much better than the latter, owing perhaps to the dryneſs of the ſeaſon; for although they do not ſtrike root many inches below the ſurface, the lower and decaying part ſerved to convey moiſture to the upper and growing part. Where the peat was ſhalloweſt, I planted ſome, leaving a foot above ground, and of equal depth with the others in the like ſoil: I found very little difference in point of growth between theſe, and thoſe in a ſimilar ſoil that had only eight inches above ground; but I was not obliged to weed them ſo early or ſo often, as the ſhoots ſtood farther from the reach of weeds and fen graſs. One rood and twenty-ſix perches were ſet with yearlings, although I had been told that none would flouriſh under two years old: amongſt theſe there were ſome, one length of which only had been taken from the yearling ſhoot, and that from the loweſt and biggeſt part, the remainder having been rejected as too weak ; theſe flouriſhed as well as the two-years old. There were others, two or three lengths of which had been cut from the ſhoot; but the ſlendereſt of theſe are not ſo vigorous, although quite as healthy as the former.

A ſmall part of the ground was, by way of experiment, kept quite clear of weeds and graſs; and there, I found, they did not ſucceed ſo well: the ſun was introduced, and deſtroyed the moiſture, which tends ſo much to their ſupport. When I perceived the effect, I ordered ſome cole ſeed to be ſown very thinly upon this ſpot: the Oſiers very ſoon felt the effect, and at Michaelmas they were as flouriſhing as the others. I was, however, obliged after that time to take it up, as it grew ſo large as to threaten to choak the ſhoots. It made excellent feed for the ſheep: turneps, I think, would do better.

I planted, by way of experiment, ſome upon a bank thrown up about two feet high, according to the cuſtom of the neighbourhood; but here they did not ſucceed ſo well; and I am perſuaded that, whenever the water can be conveyed off the land in ſummer, as mine is, by a mill or water-engine, they will do better than upon the level land without ditch or bank.

In the month of May I burnt the ſurface of ſome land, (in the weſt, called Denſhiring) at the diſtance at leaſt of forty yards from the plantation, and was very ſoon much alarmed at the injuries which thoſe that were next to it ſeemed to have ſuſtained; for although they were out of the reach of the fire, the ſmoke made the leaves curl, and the ſmaller ſhoots were much withered. The fire having been extinguiſhed, and a ſhower of rain falling ſoon after, they quickly recovered, and became equal to any of the others.

Having ſown this year ſeveral acres of cole ſeed, which is now feeding off with ſheep, by which the land will be manured, I ſhall next year plough the ſurface in, and then plough a furrow deeper, in which I ſhall plant, if I can get ſets, without being at the great expence of conveying them from the bank of the Thames: this will ſave at leaſt two pounds ten ſhillings an acre.

J. PHILLIPS.

King's Bench Walk, No. 3, *Temple.*
Nov. 24, 1794.

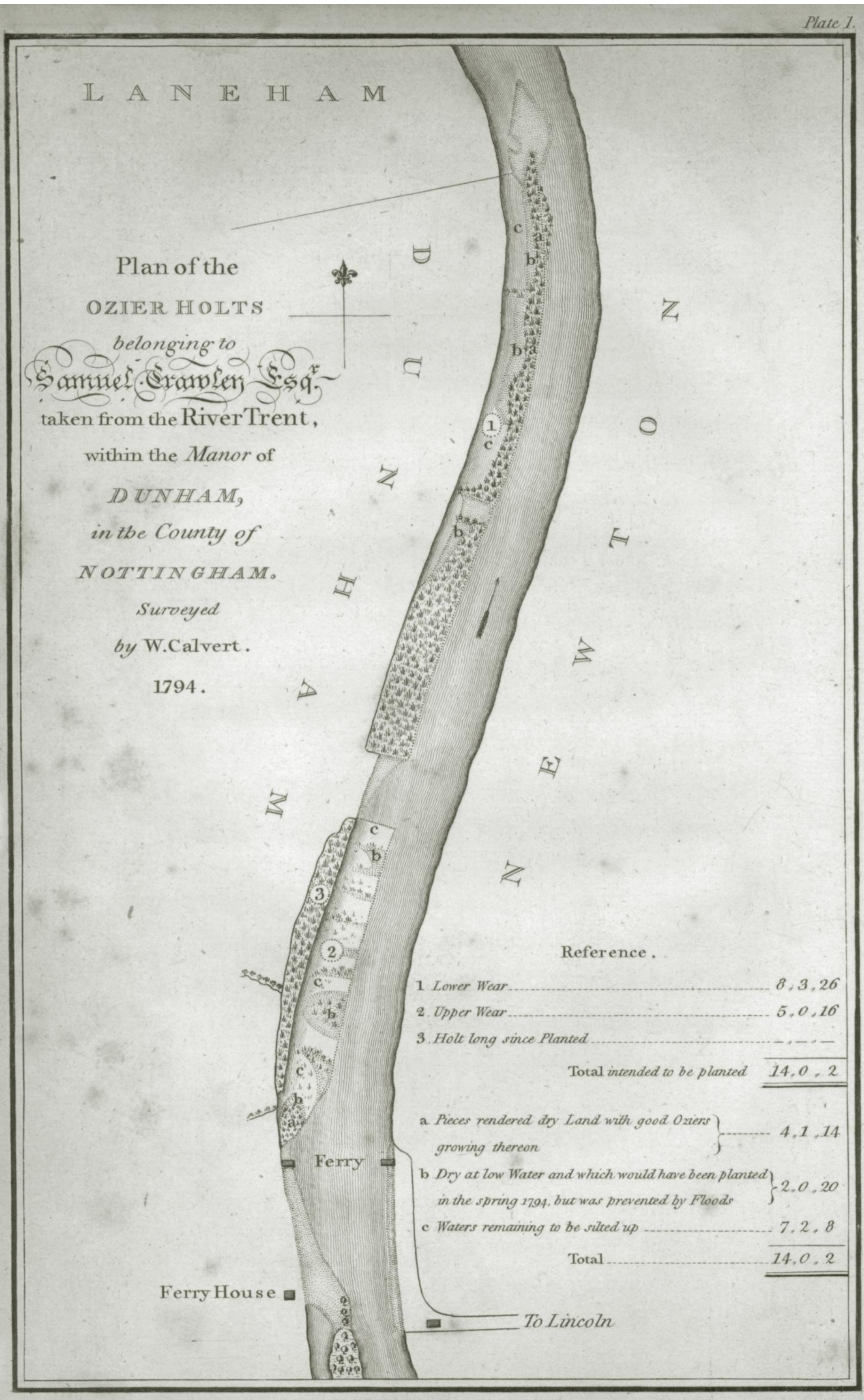
P. S. I have been offered four guineas an acre annually for my plantations.

JOHN PHILLIPS, of the Inner Temple, Eſq. in the month of March laſt, planted ſix acres and upwards with Baſket Oſiers, at Kettleſworth: they are well fenced, and in a flouriſhing condition; there were thirteen thouſand and more planted on an acre.

HENRY TANSLEY.

Littleport,
Nov. 27, 1794.

SIR,



Plan of the
OZIER HOLTS
belonging to
Samuel Crawley Esq^{r}.
taken from the River Trent,
within the *Manor* of
DUNHAM,
in the County of
NOTTINGHAM.
Surveyed
by W. Calvert.
1794.

Reference.

1	*Lower Wear*	8, 3, 26
2	*Upper Wear*	5, 0, 16
3	*Holt long since Planted*	—, —, —
	Total *intended to be planted*	14, 0, 2
a	*Pieces rendered dry Land with good Oziers growing thereon*	4, 1, 14
b	*Dry at low Water and which would have been planted in the spring 1794, but was prevented by Floods*	2, 0, 20
c	*Waters remaining to be silted up*	7, 2, 8
	Total	14, 0, 2

SIR,

I SHALL be obliged to you to lay before the Society for the Encouragement of Arts, Manufactures, and Commerce, the following particulars, upon a ſubject which, I believe, comes under their plan of general improvement: ſhould it meet their approbation, and induce other gentlemen in ſimilar ſituations to profit by theſe hints, I ſhall be very happy, being perſuaded much Land may be gained, and at the ſame time the Navigation of Rivers conſiderably benefited.

In the year 1788, when I came to this eſtate, I was informed, that the Trent Navigation Company had cauſed *Weirs* to be made to confine the water, and by that means deepen the channel of the River, and that Oſiers planted thereon would be advantageous. In the courſe of that ſummer, I made all the enquiries, and got all the information I poſſibly could; keeping in view always the method recommended by the Society, as practiſed in Holland, for gaining the Land from the Sea: and in the ſpring of 1789 I began planting and endeavouring to gain ground, putting the work under the direction and ſuperintendence of Mr. William Calvert, a ſurveyor, of conſiderable practice in the neighbourhood, to whom I am indebted for hints of the greateſt part of the means uſed.

We began with throwing all ſorts of rubbiſh into the river, to collect the ſoil and filth in its paſſage, trying various methods to effect it: but on what we had moſt reliance, and which has completely anſwered our expectation, was on faggots made of furze or gorſe, which were ſtaked down in different ways; but thoſe made into wiers, wherever there was a current to ſtop its courſe, we found to be of the greateſt ſervice to us.

I take the liberty of encloſing, for the inſpection of the Society, a Plan * of what has been done towards making theſe plantations

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* See the Plan annexed, *Plate*, No 1.

tations or holts (for the Saxon word is ſtill in uſe here), whereby they will ſee how much I have gained and planted: indeed much more Land might have been planted in the laſt ſpring, had the water ſubſided earlier.

I am, Sir,

Your moſt obedient humble ſervant,

Samuel Crawley.

Ragnall Hall, Nottinghamſhire.
Nov. 10, 1794.

SIR,

THIS is to certify, that, in the ſpring of 1789, Samuel Crawley, Eſq. ſubmitted to my care the directions of a deſign to gain from the River Trent, near Dunham Ferry, in the county of Nottingham, a long ſlip, which, prior to the undertaking, had been fenced off by the River Trent Company with Wiers, conſiſting of two rows of ſtakes, hedged and filled up with ſtones above low-water mark, to contract and render the river deeper for navigation.

Having provided a great number of bundles or faggots of furze or whins (called here Gorſe Kids) they were, by means of hedge ſtakes with their ſmaller ends downwards, and about two inches of the collateral branches at the thicker end left on, faſtened down to the bottom of the River, in rows acroſs the ſlip, ſo as to form Weirs to ſtop the ſilth or mud: theſe wiers were placed at the diſtance of from twenty to thirty yards aſunder; and within the ſpaces, other kids were put down ſingly by the ſame method, at the diſtance of two or three yards from each other. This was only done where the water did not exceed three feet in depth; and great care was taken to ſecure the Weirs ſufficiently with ſtakes, to prevent the ſtream, at ſome times very rapid, from carrying away the kids; and alſo, to raiſe them ſo high, as to prevent the water, during ſummer, from running over. At the end of October following, on examination, we found the cavities within the kids perfectly full of ſand.

The enſuing ſpring, 1790, many Iſlands had formed within the Weirs, and great quantities of ſand had lodged below them; which were planted with healthy two-years-old cuttings of the Wicker Oſiers, commonly called the Spaniſh or New Kinds, at the rate of three ſets in a ſquare yard, making fourteen thouſand five hundred and twenty in an acre, extending the planting to the depth of two feet within the water: at the ſame time more kids were put down as before, when and where the water permitted.

In the ſpring, 1791, the Land was conſiderably enlarged: almoſt all the ſets of 1790 grew and flouriſhed, except where the water was too deep. It was then diſcovered much ground had been left by the winter floods, even where no faggots had been made uſe of, by the lodgement of rubbuſh amongſt the ſets; in conſequence of which, we only put down a few kids, but continued planting as before: at the end of April, or the beginning of May, about two acres were planted.

In 1792 we found upwards of three acres and an half, which were planted in the ſame manner: we likewiſe diſcovered large beds of ſeedling Oſiers among the ſand and filth collected above and below the Weirs (of the ſame kind as the plants above them), where no Oſiers had been planted: theſe furniſhed us with ſets for the enſuing ſpring. In this year, the plants of 1789 and 1790 were cut for ſets, and planted.

In the ſpring of 1793 the Oſiers planted in 1789 and 1790 were cut for ſale; the ſhoots of which meaſured from ſix to eleven feet in length: the planting was continued as before, the plants of 1791 producing ſets for the ſeaſon: the whole planted this ſpring, amounted to three acres three roods and thirty poles.

The laſt ſpring, 1794, the plants of 1789, 1790, and 1791, were again cut for ſale, and produced a fine luxuriant crop, which was ſold at the beſt price.

The Plan herewith tranſmitted, Plate I, was laid down from an actual ſurvey by me taken; to which I beg leave to refer you for the quantity now planted; and the remainder, I hope, in a few years, will be in the greateſt ſtate of perfection.

It appears from the comparative goodneſs of the crops of this plantation, being ſuperior to the old ones in this neighbourhood, that the plants are ſupplied with much nouriſhment from the decay of the kids in which they were planted.

The plants are in general cut to the length of two feet, to ſet upon dry ground, and from two to four feet within the water, thruſt to the depth of about one foot in the filth.

I am, SIR,
Your very obedient humble Servant,
WILLIAM CALVERT.

Dalton, near Tuxford.
October 25, 1794.
Mr. MORE.

I DO hereby certify, that I have ſeen the Oſier plantations of Samuel Crawley, Eſq. at Dunham, during the proceſs of gaining them from the River: I think they are in a very flouriſhing ſtate, and have every reaſon to think Mr. Calvert's report to be accurate.

I am, SIR,
Your humble ſervant,
Mr. MORE. GEORGE NEVILL.

THIS is to certify, that, under Mr. Calvert's directions, I have ſuperintended the workmen employed in planting and cutting the holts, or Oſier plantations, of Samuel Crawley, Eſq. below Dunham Ferry; that the land cut the laſt, and this year, was very productive; the rods were of an excellent quality, and fetched the beſt prices; and that the young ones, not yet cut, are in a very thriving ſtate.

I am, SIR,
Your moſt humble ſervant,
North Clifton, WILLIAM CHAPMAN.
October 27, 1794.

Mr. MORE.

The following Accounts and Certificates having been received; the GOLD MEDAL, being the firſt Premium offered for planting mixed TIMBER-TREES, was this Seſſion adjudged to THOMAS RAWLINSON, of Morecambe Lodge, Lancaſhire, Eſq.

SIR,

I WAS favoured with your letter of the 23d of May, 1792, in conſequence of my worthy deceaſed and much-lamented friend, Lord George Cavendiſh, communicating to you my letter to him, on my plantations, and who recommended me to preſent them to the Society for Encouragement of Arts, Manufactures, and Commerce. I now take the liberty to give you an account of the plantations and improvements I have made.

In February, 1791, I purchaſed an eſtate at this place, that had fifty-eight ſtatute acres of common, very much covered with ſheets of limeſtone rocks, and large limeſtone cobbles; about twelve acres ſo hanging and rocky, not worth half-a-crown an acre, but having moſtly between the rocks one or two feet of ſoil. I concluded to plant it with the hereafter-mentioned trees; and the whole, except about an acre and a half, is encloſed to the weſt, at the top of the hills, with a ſtrong wall, five feet and a half high; and at the foot, to the eaſt and ſouth-eaſt, with a three to three feet and half wall, planted with quicks within; and the acre and half is protected by walls, from any cattle, except ſheep, which are not allowed upon the eſtate. The ſoil is fine brown earth; and the manner of planting was, by taking a ſquare ſod, of about two inches thick, where the ground allowed it, and digging a hole ſufficient for the plant. Particular attention was paid to the Oaks, that there might be plenty of ſoil for the tap; and I have the ſatisfaction to ſay, the whole of the plantations are much better than I flattered myſelf;

ſelf; the dead plants not being, on an average, three to one hundred. Thoſe principally that failed, were the Birches, owing to their coming from a diſtance, and in froſt.

The Larches and Scotch Firs have ſhot greatly, eſpecially the former, which this ſoil and ſituation beſt ſuits; the diſtance in planting is from two to four feet: I commenced planting the 5th of November, 1791, and finiſhed the whole by the 10th of April, 1792. By clearing the land to make the plantation walls, and ſince by encloſing ſeveral fields, and improving by lime and compoſt, I have made forty-one acres, fine, arable, and paſture land; the remaining five acres are in ſheets of rock, or not cleared.

You will, encloſed, receive Mr. Jenkinſon's Certificate, who overlooked the planting; and which is alſo ſigned by Mr. Horrabin, a reſpectable gentleman in this place. I preſume, theſe will be ſufficient for you to lay before the Society, if worthy their notice; and refer you to Mr. Jenkinſon for further information, if requiſite.

I am preparing to make a further conſiderable plantation and improvement upon forty-four acres of common I have lately purchaſed, and mean to go chiefly upon Larches, as the moſt encouraging.

I am, Sir,

Your aſſured friend,

Thomas Rawlinson.

Morecambe Lodge, Yealand,
Oct. 30, 1794.

Trees planted by Thomas Rawlinſon, Eſq. at Yealand, between the 5th of November 1791, *and* 10*th of April,* 1792.

20170	Aſh,
18910	Oaks,
2310	Sycamores.
2300	Beech,
2010	Spruce Firs,
2900	Larches,
3650	Scotch Firs,
3900	Elms,
3940	Birches,
705	Weeping Birches,
312	Weymouth Pines,

300	Huntingdon Willow,
200	Hornbeam,
110	Pine-aſters,
100	Seals,
80	Black Cherry Trees,
70	Balm of Gilead Trees,
70	Silver Firs,
64	Cheſnuts,
40	Aſpins,
25	Walnuts,
25	Spaniſh Cheſnuts.
62,191	Trees.

SIR,

I HAVE juſt received a letter from Mr. Thomas Rawlinſon, who is now removed to Lancaſter, for the winter; he mentions, that he had written to you in regard to his plantation; and that one Mr. Horrabin, of this place, a gentleman retired from buſineſs, he requeſted with myſelf would certify to you the ſtate of his plantation at preſent. By this, therefore, we aſſure you, that we do not in the leaſt doubt that the incloſed catalogue, as given by Mr. Rawlinſon, is juſt. The ground, where he has made his plantation, was for the moſt part of a very trifling value: to many places, ſoil from ſome potatoe-ground was carried, to plant the trees in, among the rocks, which makes the trees grow well. Had the Oaks and Aſhes been planted in cultivated ſoil, it would have added much to their preſent growth.

Very few of the trees have died, ſcarce more than two or three in the hundred, except the Birch, in which plants Mr. Rawlinſon was not well ſerved; but thoſe that live now flouriſh well, as does the Larch, and different ſorts of Fir. Many of the Larches and Scotch Fir have grown this year ſixteen or eighteen inches, ſome more; the Aſh and Oaks that were ſmall plants, as many of them were, do not ſhoot much; numbers have loſt part of their tops, and ſhoot out below; but as they gather ſtrength, or are cut off below the dead part, there is little doubt but they will ſoon flouriſh. A trial of cutting them off a little above the ground was made on a few this ſpring, which anſwers well; the ſtrong plants with the Sycamore do very well with the other plants.

We are yours moſt aſſuredly,

RICHARD HORRABIN,
JOHN JENKINSON.

Yealand, Oct. 30, 1794.

Mr. MORE.

The Thanks of the Society were given to THOMAS SKIP DYOT BUCKNALL, Eſq. for the following Communication relative to ORCHARDING, which may be conſidered as ſupplementary to his Papers on the ſame ſubject, already publiſhed in the Eleventh and Twelfth Volumes of theſe Tranſactions: and the Society, convinced that it will be of great advantage to have the Orchards in the ſeveral parts of the Kingdom brought to the higheſt poſſible degree of perfection, have this year offered very conſiderable Premiums for that purpoſe. See Claſſes 74, 75, 76.

SIR,

I BEG you will convey my beſt acknowledgements to the Society for the Encouragement of Arts, Manufactures, and Commerce, for the regular attention they have been pleaſed to ſhew to the Papers I have had the honour to lay before them, on the ſyſtem of Cloſe-Pruning and Medication, as expreſſed in my letters, inſerted in the Eleventh and Twelfth Volumes of their Tranſactions; and for the very handſome Premiums offered by them, in conſequence of thoſe communications: and I hope, like the other uſeful branches, which have been at firſt foſtered, and then brought to perfection by their attentive care, this will produce elegance throughout the plantations of Fruit-trees in the Kingdom, and general good to the community at large.

In this I will add ſuch further hints as may conduce to guard the planter from diſappointment. Let it be obſerved, I do not retract in the leaſt the ſtreſs I before laid on ſhelter, nor the neceſſity of the ſoil being well choſen, with proper aſpect.

It is generally imagined, that when the trees are planted, the troubleſome part of forming an Orchard is over: but the fact is far otherwiſe; for a greater difficulty remains, which is, to determine what proper uſe to apply the ground to; for if it is cultivated by the plough, little good can be expected; for the injuries which young trees conſtantly receive from implements in huſbandry bruiſing and deſtroying them before they can have got full poſſeſſion of the ſoil, generally hurts them moſt eſſentially; and if, by a ſuperlative care, they ſhould ſurmount the evils ſo brought on, the crops of corn being regularly carried off the land, impoveriſhes the ground ſo much, that the trees are ſoon ſtunted, and run to moſs.

There is not any culture we are acquainted with, equal to hops, for raiſing an Orchard; and when the proper time comes for grubbing up the hops, the trees may be ſecured, and the land turned to grazing. However, let the agriculture be what it may, the land ſhould never be ploughed, or dug deep, directly over the roots of a young-planted fruit-tree; for as the roots collect their beſt benign ſap from their extreme points, if thoſe points are broken off from the upper ſide of the roots, that tree is compelled to ſubſiſt on nurture drawn from the under-ſtrata, and conſequently the ſap will be of an inferior quality.

It may be regularly obſerved, that, where trees ſtand in ſuch a ſituation, that the hogs and poultry are conſtantly running over the ground, thoſe trees very ſeldom fail of a crop, which is the beſt proof that manure is neceſſary; and any manure will ſuit an Orchard: but there are ſeveral ſorts of manure which are overlooked, ſuch as the ſweepings of cowhouſes, ſlaughterhouſes, emptying of drains, and every thing filthy; and theſe are more diſpoſed to facilitate the growth and health of fruit-trees, than the manure from the ſtable.

An eſſential circumſtance to be attended to is, that the fruits be ordered of thoſe ſorts which thrive in the neighbourhood where the plantation is intended to be made, and a ſtrict regard ſhewn to that purpoſe, as the beauty and value of the whole Orchard will greatly depend upon the trees being well ſuited. There is a ſtriking inſtance of this at Sittingbourne, and its neighbourhood: the lemon pippin is invariably a fine thriving tree, and the ſummer pearmain as conſtantly ragged and out of health; and this obſervation may be applied throughout the whole range of fruit-bearing trees, according to the ſoil and ſituation.

The ancient Orchards of Kent, which were moſtly grubbed up about fifty years ſince, produced the Kentiſh pippin, lemon pippin, ruſſet, cat's-head, and other hardy-keeping fruits; but as the age refined in luxury, the more delicate apples were introduced. The ſharp north-eaſt winds, in many ſituations, were certainly too ſevere for theſe productions: though I entertain no doubt but this appearance of a caprice or particularity in nature, may by attention be in part corrected, though any attempt to point out the cauſe would lead me too far from the preſent ſubject.

Care ſhould be taken, not to ſuffer trees to bear much fruit while young: it ſhould be gathered as ſoon as ſeen, except about half a dozen, to ſhow the ſize and quality. The young trees being kept clear, will give them, if I may uſe the expreſſion, the habit of producing larger and finer fruit: but that is not the material reaſon; by being kept clear, the leading and collateral branches run ſtronger each year; and be aſſured, if the tree can be brought to a proper ſize, there will be no doubt of its bearing afterwards. Obſerve among thoſe gentlemen who pride themſelves for being maſters of fine ſtock, either horſes, cattle, or ſheep, and you will find, the governing principle with each of them, is to run the young ſtock to as *long bone* as poſſible in the firſt year; knowing, from experience, that having once ſecured bone, fleſh, figure, and ſymmetry will follow. Such trees as ſuit the ſoil may, by eaſy means, be induced to grow to a ſize beyond what we imagine: let the land be grazed or manured, and gather the fruit before it can be applied to any uſe. How long this cuſtom ſhould be continued, each Orchardiſt muſt judge for himſelf; but no one will have the leaſt chance for the prize, who does not take off the fruit for ſome time at leaſt.

There is no impropriety in deeming the heads of fruit-trees, as ſo many hemiſpheres: only ſuppoſe it poſſible, by any art, to induce each of the branches of one tree to grow two inches longer than thoſe of another tree in the ſame year; that free-growing tree will, in eighteen years, double the head of the other: ſo much for ſize. Health is the certain conſequence.

No young plant, or newly-engrafted tree, ſhould be ſuffered to run *mop-headed*; for until each branch has acquired a determined leader, that tree will make no progreſs; and a tree, like an animal, if it takes a ſtunt, it is difficult to throw ſuch energy into the ſyſtem afterwards as will make it free-growing.

It has been objected, that if no leading branches are to be ſhortened, the nurſery-man could not form the ſtems to ſupport the head.

Undoubtedly, while the plants are in the nurſery, the ſlighteſt practitioner knows that the head muſt be cut down, to give ſtrength and ſymmetry to the ſtem; and it is alſo neceſſary that moſt of the grafts be ſhortened, or the wind will blow them out; and during the time the plants are in an infant ſtate, ſhortening helps to ſwell out the buds. It was never meant to exclude ſhortening, until the plant was become a tree; and it is perfectly within the nurſery-man's art to produce all his ſtandard fruit-bearing trees with ſtems large and ſmooth, buds full and round, and leaves broad and open, without the tree being liable to canker, or gum; and this is given as the character of a perfect and valuable tree.

Moss.

One of the greateſt obſtructions to good Orcharding is Moſs, which is merely the reſult of poverty and neglect, reflecting a diſcredit on the owner. Where trees are much overrun with Moſs, a ſtrong man with a good birch-broom, in a wet day, would do great execution. But to enter more into the buſineſs, what is Moſs? a plant; and, like other plants, may be eradicated on the firſt appearance: for that purpoſe, on young trees, the beſt method is to rub all the branches, ſpring and autumn, with a hard ſcrubbing-bruſh and ſoap-ſuds; and the action of rubbing will ſo far invigorate the tree as to overpay both trouble and expence. There is no damage can befall the tree from rubbing; and let it be performed as a groom does a horſe's legs.

Certainly the beſt ſoil to plant on is a fine deep loam; and no one, for profit, would think of planting on a ſtrong clay, chalk, or a cold ſharp gravel: but where a gentleman, for the embelliſhment of his reſidence, would wiſh for an Orchard on either of theſe ſoils, never dig into the under-ſtrata; for that would be placing the trees in ſo many well-holes, where certain deſtruction muſt enſue: therefore, rather plant the trees above-ground, raiſing over it a little mound of good freſh mould, about as large as an extenſive ant-hill, under a curve of eight inches by ſixty, and ſow the top with white Dutch clover.

CANKER.

In pruning, the medication ought never to be omitted; for, from experience, the mercury is found to be ſo ſtrongly operative in removing the baneful effects of Canker in the more delicate fruit-trees, that it may be preſumed to enter into the economy of the plant, giving a ſmoothneſs to the bark and freeneſs of growth; proofs of which will be produced to the Society in a few years, by perſons who have attentively conſidered the ſubject.

I ſhall here give an abſtract of the ſyſtem of cloſe-pruning and medication, as before laid down, that it may be ſeen at one point of view.

Let every ſtump, the decayed or blighted branches, with all thoſe which croſs the tree, or where the leaves curl, be taken off ſmooth and even; pare down the gum cloſe to the bark, and rather a little within, but not to deſtroy the rough coat; open the fiſſures, out of which the gum oozes, to the bottom; cut away the blotches, and pare down the canker; then anoint all the wounds with the medication, ſmearing a little over the canker, which was not large enough to be cut; ſcore the tree, and rub off the moſs; but do not ſhorten a ſingle branch: follow the ſurgeon's rule, go to the quick, and no more; act with obſervation, and each practitioner will improve the ſcience.

A tree under ſuch care, muſt, with its remaining free ſhoots, run large, which requiring a great flow of ſap, will keep the roots in conſtant employ, and from that very ſource neceſſarily eſtabliſh permanent health.

SIR,

IN this public manner I deſire of you to accept my thanks, and aſſure the Society they will always command my beſt regards.

Your humble ſervant,

THOMAS SKIP DYOT BUCKNALL.

Hampton-court,
April 20th, 1795.

P. S. Where the only object is to remove the canker, I find hog's lard preferable to tar; but where the wet is to be guarded againſt, tar is ſuperlatively better.

The Thanks of the Society were given to WILLIAM HAMPSON, Eſq. for the following Communication on the ſubject of DESTROYING INSECTS in ORCHARDS, &c. which is here inſerted as ſerving to confirm the doctrine laid down in the foregoing Paper on Orcharding, by Thomas Skip Dyot Bucknall, Eſq.

SIR,

BY laying the encloſed paper before the Society for the Encouragement of Arts, Manufactures, and Commerce, you will oblige,

SIR,

Your moſt obedient ſervant.

WILLIAM HAMPSON.

Dewſnop, in Duckenfield,
near Mancheſter.
Feb. 11, 1795.

On

On the Means of preventing Caterpillars on Fruit-trees.

IT will not appear foreign to the ſubject, if ſome general obſervations which are well known to thoſe who have the management of fruit-trees, and more particularly the apple, precede an account of the means here diſcovered for preventing the deſtruction often occaſioned by the ravages of the Caterpillars. 1ſt, A winter, in which there is a ſevere froſt for a long continuance, is accounted favourable to the ſucceeding fruit-harveſt. 2dly,. Young and healthy trees, which are continually diſtending the rind, and putting forth vigorous branches, are not often attacked with the Caterpillars; or if they are, it is when the foliage of an aged or ſickly neighbour is exhauſted, and then being urged by want of food, the worn throws out its ſilken line, which, carried by the wind, clings to the branches of another tree, and by this means it effects a paſſage.

Some time ago, having an intention to improve a number of apple-trees, which, owing to their being yearly infeſted with the Caterpillar, had been long neglected, I began in the following manner. It being early in the ſpring, I firſt cauſed the thick brown moſs to be removed from the trunk of the tree, around which, but at a diſtance equal to the extremities of the roots, I ſpread warm rotten litter; and then, with the back of a pruning knife, ſcraped off the livid-coloured moſs with which the branches of the tree were entirely encruſted. But what ſurpriſed me, and to which I would beg particular attention, was, that ſmall detached pieces of moſs hung upon the bough by fine threads, after it had been cleaned: this led me to think they belonged to ſome eggs or inſects which lay concealed between the moſs and the outer bark, or between the outer and the inner rind; but being then without the help of glaſſes, my curioſity remained unſatisfied, although the effects diſcovered in the opening ſeaſon juſtified my ſtrongeſt apprehenſions; for thoſe trees which had been thoroughly cleaned, put forth ſtrong and healthy ſhoots, and retained their leaves; when others, their neighbours, were eaten up: yet what convinced me beyond the leaſt doubt, was a tree which through negligence had been left in part cleaned; the boughs which I had cleaned were untouched by the Caterpillar; on the contrary, the leaves of thoſe boughs I had not cleaned, were ſoon conſumed by them.

Theſe facts being ſtated, the following remarks are naturally ſuggeſted. Firſt, that the eggs of the Caterpillars lie, during the winter, concealed in ſuch trees as are overgrown with moſs, between the moſs and the rind, or, where the rind is decayed, in the cavities occaſioned by ſuch decay; a circumſtance which, with the aſſiſtance of a microſcope, I have ſince aſcertained: but through mere neglect, having not preſerved the eggs for future obſervation, I cannot ſay determinately they were the eggs of the

Caterpillar; but this I can' ſay, that the removal of thoſe eggs prevented the leaves of the tree from being eaten. Secondly, that the proper time for deſtroying them would be before the eggs are hatched; for, by the time the Caterpillar is come out, the buds begin to open, and of courſe become its immediate prey; and as the butterfly-tribe are ſo numerous and ſo perfectly free from reſtraint, the nature of the caſe will require an annual ſearch to be made in ſuch places as are thought favorable to them for depoſiting their eggs: there will be often found full-grown trees, which by being encumbered with branches, the power of the ſun is not admitted to ſhrivel the old rind as the new one is forming; conſequently ſuch trees become encruſted with decayed coats, the fit receptacles for preſerving the embryo Caterpillars; and ſuch trees whoſe wounds have been ſuffered to heal, ſo as to form an hollow, retaining moiſture, which cankers the wood, and renders it eaſily perforated by the fly, are likewiſe liable to become a prey to the inſects they have preſerved.

The above obſervations are offered as hints only, on a ſubject capable of deriving more advantage from thoſe who enjoy greater opportunities to inveſtigate, and ability to inform, than what has fallen to to the lot of their author; and it is with this preſumption they are offered to a Society, the members of which have it in their power to employ them to the beſt advantage, namely, that of the public good.

The ſollowing Account and Certificate having been received; the GOLD MEDAL, being the firſt Premium offered for the Culture and Cure of the TRUE RHUBARB, was this year adjudged to Mr. JOHN BALL, Surgeon, of Williton, in Somerſetſhire; whoſe former Papers on the ſame ſubject are inſerted in Vol. XII. page 229.

THIS is to certify, that Mr. John Ball, Surgeon, of Williton, in the pariſh of St. Decumans and county of Somerſet, has cured this year ninety-ſeven pounds of the Rheum Palmatum, or true Rhubarb, of his own growth; and, as he believes, equal to ſuch as is commonly uſed or known by the name of Turkey or Ruſſia Rhubarb; and that the whole is of the ſame goodneſs with the five pounds ſent herewith as a ſample.

HUGH TORRINGTON, Churchwarden.
JOHN PULMAN, } Overſeers.
JAMES WOOD, }

The Culture as follows.

I ſow the ſeeds about the ſecond week in February, in drills ſix inches apart, and one inch deep, upon beds of three or four feet: if the weather ſhould prove mild, the plants will appear in a fortnight or three weeks; and if it is a dry ſeaſon, I give them moderate waterings; if too thick, thin them from two to three inches; and when about four inches high, tranſplant them where they are to ſtand, from four to ſix feet from each other, in a deep ſoil, well manured with good rotten dung, ſifted coal-aſhes, and lime previouſly ſlaked, and mixed with a proper quantity of mud, or waſte from a mill-pond, or with earth from the guttering of meadows. I keep them free from weeds, and, if occaſion, give them moderate waterings; am particularly careful to keep them free from ſlugs, they being exceedingly fond of the tender plants, and would ſoon deſtroy them, if not attended to; for which reaſon, I generally look over the plantations every night about eight o'clock, and take them away, and ſo continue until I find the ſlugs are all deſtroyed, and the plants have taken good roots.

For theſe two years paſt, I have ſown ſeeds in September; and the firſt week in October they came up, grew exceeding well, and made good roots, fit to be tranſplanted in the laſt week in February or beginning of March; and am of opinion, that this is the beſt time for ſowing them.

The Method of Cure.

I take the roots up, upon the ſtalks withering or dying away; clean them with a dry bruſh, and cut them in ſmall pieces; ſtring them on a packthread, keeping every piece apart, and hang them acroſs poles fixed to the cieling in a kitchen, where there is a conſtant fire; which I now find to be much ſuperior to the open air and ſun (which had been my uſual method for theſe ſeveral years paſt), not having had one rotten or moulded piece this year.

The following Account and Certificates having been received; the firſt Premium, being the GOLD MEDAL, or the SILVER MEDAL and TWENTY GUINEAS, at the option of the Candidate, was this Seſſion adjudged to MR. HENRY HARPER, of Bank-Hall, Kirkdale, Lancaſhire, for improving Seventy-five Acres, of Eight Yards to the Rod, of WASTE MOOR LAND. This Candidate made choice of the SILVER MEDAL and TWENTY GUINEAS.

An Account of the incloſing and improving ſeventy-five acres, of eight yards to the rod, the whole of Bootle Marſh, for which I agreed with the proprietor for a leaſe for twenty-one years, and by the agreement was to incloſe and improve all the improvable land, according to a plan drawn up for that purpoſe; and to find all gates, &c. pay all taxes, that it may be charged with during the leaſe.

THE ſoil a white poor ſand, adjoining the ſea-ſhore, along the River Merſey, which empties itſelf into the Iriſh Sea: the weeds it produced, chiefly poor friz, gorſe, and bent: the value of it, and another marſh, called Linecre-Marſh, was thirty pounds a year, which amounted to four ſhillings and ten-pence per acre, of eight yards to the rod; on which they kept a few half-ſtarved cattle, and the gorſe chiefly cut and ſold to perſons who ſent it to Liverpool, where it is uſed for ſweeling ſhips*. I had them both together for three years, for the thirty pounds a year; and then Linecre-Marſh went from me; and I was, by the agreement, to give ſixty pounds a year for my leaſe of Bootle-Marſh only.

I agreed for it in the year 1778; and then I began incloſing and improving, and finiſhed all the improvable land in the year 1780.

Marling was the firſt improvement, at the rate of ſix rods and a half per acre, each

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* After a ſhip's bottom has been paid with tar, fat, &c. a flame from a tar-barrel or gorſe is expoſed to the ſurface, to melt it ſo as to run into the ſeams.

rod containing ſixty-four cubical yards; then dung according to the crops taken. The firſt crop taken was wheat, on the drieſt parts, with once ploughing; ſown broad-caſt, and no dung; produce, five quarters per acre. The firſt crop taken from the parts not quite ſo dry was barley, ploughed three times, ſown broad-caſt, with a little dung; produce, ſeven quarters and a half per acre; ſkim-fallowed before marled. The wetteſt part, oats, ſown broad-caſt, with once ploughing; produce, eight quarters per acre. When the ſeaſons have been dry in May and the beginning of June, the crops have been light, and in ſome places all burnt up; but when the month of May and the beginning of June have been ſhowery, the crops have been good.—The general averages have been,

	Qrs.	
Wheat, from a ſummer fallow,	8	*per acre.*
Wheat, from clover, ploughed one, two or three times, or from a clean ſtubble of white corn,	6	ditto.

	Qrs.
Barley,	7 *per acre,*
Oats,	8 ditto.

Clover, three tons per acre.

The Size of the Fields.

	A.	R.	P.	
New Cloſe,	10	2	2	
Big Marſh, Delf Field,	19	1	36	
Bull Field,	5	0	0	
Little Field,	2	3	36	
Land-mark Field,	8	1	15	
New-mill Park,	5	2	33	
Little Croft,	0	0	30	
Corner Croft,	0	2	32	
Lower New Cloſe,	5	0	37	
	58	0	21 at	
Twenty-two pounds fourteen ſhillings and one penny per acre, is				£.1316 16 10

Unimprovable, but incloſed.

	A.	R.	P.	
Lower Marſh,	5	0	0	
Long Marſh,	11	3	19	
	16	3	19	
Expence of incloſing				25
Total expence on ſeventy-five acres,				£.1341 16 10

The fences are cop, and ditch, five feet wide at top, two feet and a half deep, and two feet wide at bottom; cop, four ſeet high. About one half of the fences is gorſe ſeed ſown in a drill near the top of the cop; and where it comes on, it makes a good fence: the other half is poſts and rails ſet on the top of the cop.

The average value of the fifty-eight acres twenty-one perches, laid down for graſs, is now two pounds fifteen ſhillings per acre, of eight yards to the rod: I have marled ſixteen acres of it a ſecond time, at the rate of eight rod to the acre; which anſwers every expectation I had formed of it. Till Mr. Holt, the Surveyor of Agriculture for Lancaſhire, informed me, I did not know there was ſuch an inſtitution as the Society to whom I now addreſs myſelf, or I might have ſent the account before this time; and Mr. Holt thought ſuch an improvement ſhould be more known.

HENRY HARPER.

Bank-Hall, Kirkdale,
Nov. 26, 1794.

Mr. MORE.

WE have been well acquainted with the land above mentioned, both before and after Mr. Harper's improvement, and believe the account given to be true and juſt.

HENRY HEATHCOTE, Rector of the Pariſh of Walton on the Hill.

JOHN HOLT, Surveyor of Agriculture, for the County of Lancaſter.

The SILVER MEDAL and EIGHT GUINEAS were this Seſſion voted to Mr. JOHN JENKINSON, of Yealland, in Lancaſhire, for his IMPROVEMENT of LAND, allotted to him on the Incloſure of the Commons in that part of the County, as deſcribed in the following Papers,

DEAR FRIEND,

THE many rewards the Society for the Encouragement of Arts, Manufactures, and Commerce, have held forth to the Public, have been of great ſervice; and your politeneſs in encouraging me to offer myſelf a candidate for their favour in the agricultural line, makes me preſent the following particulars to you; which, if they ſhould merit the Society's notice, will give the greateſt pleaſure to your moſt aſſured and reſpectful friend,

JOHN JENKINSON.

Yealland,
Oct. 27, 1794.

Mr. MORE.

BY virtue of an Act of Parliament, we began the incloſure of the Commons within the two Yeallands, in the north of Lancaſhire, ſixteen years ago.

The allotments which the Commiſſioners aſſigned to me, were in three places; two not inconvenient to my houſe; the third, near ſeventy acres, about three miles diſtant. The whole, one hundred and ſix acres.

The ſoil, where not rocky, is in general a good hazel mould; ſome rather loamy in the diſtant lot; none ſandy or gravelly. Many of the plaineſt and beſt parts produced, in abundance, the common braken, or bracken; and in moſt places were great quantities above ground of ſingle lime-ſtone rocks of all ſizes; the largeſt ſort required to be ſeparated by gunpowder, before they could be removed, or the land ploughed.

Being fully convinced that the common in its natural ſtate would not anſwer any good purpoſe, I immediately began to let off ſeveral parts, to be cleared of the ſtones;

which, when broken up, made good fences of them to divide my allotment into fields, and ſeparate them from my neighbours. By this means my land was cleared, and I got good fences.

To bring the land into cultivation, various methods were tried, but paring and burning ſoon became the general mode, in the firſt inſtance, for a crop of rye or oats; which ſcarce ever fails. In my ploughing among the brackens, I gave orders to plough with a good hold, in order to break the roots: one perſon, willing to do his buſineſs with more eaſe than judgment, ploughed ſhallow: his crop ſuffered greatly by the brackens; the trial cured him: the brackens run their roots like a net a few inches below the ſurface, which ought to be broken by the plough.

Some others as well as myſelf, after paring and burning, ſowed wheat or barley; but the crops did not anſwer. Turneps anſwer equally well as rye or oats: I alſo tried ſummer fallowing in the firſt inſtance, tilling the ſame with a compoſt of lime, earth and dung; the crop of wheat good, and the next crop better than the ſecond, after paring and burning.

In many places, we planted quickſet fences, where not too much expoſed to the ſea-wind; the ſides of the ditches or banks made of ſtone about three feet high, the inſide filled with earth, in which the quickſets were planted: at firſt I ſet the ſtone-walls on the ſurface, but ſince found it much better to take the earth out a ſpade deep: it makes the wall ſtand firmer, and the earth thrown out ſerves for a compoſt.

The two allotments near home being divided into fields, the parts moſt free from ridges and beds of rocks I cultivated and broke as before mentioned; but the part ſituated among the ridges and beds of the lime-ſtone rocks, and not capable of being ploughed with any degree of eaſe or profit, I covered with lime or compoſt. Both ways anſwer well; but a good compoſt of earth, lime and dung, I prefer to lime alone;

lime itſelf, I ſet on at about ſix yards to the buſhel of twenty-four gallons.

My other lot, at a diſtance, I kept a few years in my own hands, dividing it into fields, and bringing it into cultivation; ſince which I have let it, and built a houſe and barn thereon: one place, of about ſeven or eight acres, being moſtly rocks and bruſhwood, made out for a wood: in the firſt place, cut the natural wood, moſtly hazle, for it to ſpring afreſh: in the vacancies I planted ſeveral thouſand trees, nine or ten years ago; the birch and alder (or what in this country is commonly called the eller) grow well; but the aſh and oak get forward very ſlowly, though now they begin to grow more freely. The ſituation not very favourable, being much expoſed to the Weſtern Ocean, or rather the Bay of Morecambe.

In my allotment near home I have planted at leaſt a dozen ſmall plantations of trees, in which the Scotch Fir anſwers beſt; the Spruce I find the worſt; it will do nothing, except in a very ſheltered ſituation: the Larch is the quickeſt grower, but, if expoſed to our weſterly wind, little better than the ſpruce. In one plantation I planted the Sycamore to the weſt; but the Scotch Fir ſtands better.

The method I took to deſtroy the brackens in the land not ploughable, was, for ſeveral years after the incloſure, to mow them twice in a ſummer, which has ſo effectually annihilated them, that now a boy would carry the growth of ſeveral acres on his back.

Courſe of Crops in general.

1ſt. If a dry ſpring, that the paring can be got burnt, early oats, if not rye, at Michaelmas.

2d. Late oats, or barley, if manured, ſown with clover.

3d. If oats laſt year, then moſtly ſummer fallow; but I prefer turneps, then oats or barley.

4th. Wheat.

5th. Oats, or barley.
6th. Clover, white or red; if red, break up after one year for oats; ſome after two, but not ſo well.

N. B. Taking up the commons did not leſſen the value of the old incloſures, ſo that what the proprietors of land got for their common-right was clear gain.

We believe the above is an exact account,

JOHN FORD.
JAMES JENKINSON.

Lancaſter,
October 20, 1795.

The SILVER MEDAL was this Seſſion voted to Mr. JOHN MIDDLETON, for the following Communication relative to the Culture of CLAY SOILS.

SIR,

AS the cultivation of Clayey Land in a ſtate of aration is confeſſedly leſs underſtood, than the management of turnep and barley land (ſandy land), I propoſe it ſhall be the buſineſs of this paper, to point out a method of doing it with nearly equal facility, and with more profit, than is uſually done by the beſt methods now practiſed on ſandy lands; and that the courſe ſhall be calculated to completely annihilate the ſyſtem of fallow years, by the adoption of a four-years courſe—of, 1ſt, winter tares;—2d, oats;—3d, clover; —4th, wheat.

Tares have not been eſtimated ſufficiently high in any account that has yet come under my eye. Valuing them as green food at about the price of turneps, at thirty, forty, or fifty ſhillings an acre, does not by any means do them juſtice: they are convertible into hay, generally containing as much food, and better in quality than the beſt meadow.

Not many perſons grow them; and thoſe who do, have uſually had only an acre, or two or three, giving them green to horſes; and the remainder, when any, perhaps half an acre or an acre, made into hay, though more generally ſtanding till they are ripe, and threſhed for their ſeed.

The method which I am now recommending is, to ſow tares over one fourth part of all the tenacious arable land of a farm; and let them be nearly the whole, or the only food given to the farmer's ſtock, as long as they will eat them without waſte, which will be until the tares begin to decay at bottom. Mow all the reſt when the pods begin to form, and make them into hay: a pretty good crop will produce three tons per acre, equal in quality to ſainfoin, and ſuperior to every other; uſually worth twenty ſhillings a load above the price of the beſt meadow hay, made or cured equally well.

I had about eighteen acres of winter-tares laſt ſummer; fed ſix, and made twelve into hay, containing full thirty-ſix loads, worth five guineas each, or fifteen guineas per acre, in the ſaving meadow hay and corn, which ſeems to me to be a correct method of eſtimating the value of tare and clover crops.

As faſt as the ground is cleared of tares, to the extent of about an acre, let it be ploughed; and as ſoon as the whole field is thus cleared of tares and ploughed, let it be harrowed, reploughed and harrowed, the couch repeatedly picked and burnt, till it be rendered clean as the beſt fallow could make it; and while it is dry, before the autumnal rains ſet in, plough it into ridges that are beſt calculated for keeping it dry (I eſteem thoſe ridges of the beſt ſize for this purpoſe, that are about three feet wide, and made by two bouts of the plough):

water-furrow it, and thus leave it through the winter, until oat-ſeed time, at the earlieſt period of which harrow in oats and clover; the crops of both will be abundant.

I here recommend weeding the clover, and all hay-crops, about a fortnight before mowing time: the quantity of ſmother will deſtroy ſome of the weeds, and check all the reſt.

The oats being reaped in the ſecond year, and the clover mown once or twice in the third; plough in ſeed-wheat, covering it by a thin and narrow furrow: and note, that here again I prefer its being done into ridges of three feet wide, made up by two bouts of the plough, which, I think, ſecures a quicker and more perfect drainage than can be done by ridges of any greater width. The water-furrows being well opened, the whole will be dry through the winter, and in due time there will be a plentiful crop of wheat.

The wheat being reaped, manure all its ſtubble; and in September plough in tares, covering them by a thin and narrow furrow.

The ploughings are given the land in a dry ſtate during the ſummer: all winter, ploughing, treading the ground in wet weather, and poaching it, is, as it ought to be, entirely avoided.

Having thus gone through my four years courſe, it is hardly needful to obſerve, that it is calculated to keep the land clean, and to inſure one valuable crop in every year.

I have prepared an account of the expences, produce, and probable profit; but every eſtimate of that kind is too local for general information: ſuffice it, that with me the produce is twelve pounds, my expences ſix pounds, leaving ſix pounds per acre for rent, taxes, tithes, riſks, intereſt, and profit.

I am, SIR,

Your moſt obedient ſervant,

Weſt-barn Farm,
Merton.
Dec. 29, 1794.

JOHN MIDDLETON.

Mr. MORE.

IN conſequence of a letter written to Mr. Middleton, requeſting him to inform the Committee of Agriculture, What was the ſtate and value of the land he mentions, previous to his managing it in the manner he deſcribes? the following anſwer was received.

SIR,

THE land was occupied by a bad farmer, who held it under a leaſe which allowed him to take three crops of corn in ſucceſſion, and then to fallow; and was, as farms uſually are at the expiration of the leaſe, foul and exhauſted.

I am, SIR,

Your very humble ſervant,

JOHN MIDDLETON.

Paradiſe-row, Lambeth,
Feb. 16, 1795.

Mr. MORE.

The Thanks of the Society were given to RICHARD RAMSDEN BRAMLEY, Eſq. of Leeds, for the following Communication, relative to the CULTURE of LANDS in the Neighbourhood of Great Towns; and in conſequence of the expreſſion near the concluſion of his Letter, in which is mentioned, that a large Quantity of Land is likely to come into his hands, he was informed, that any future Communication will be highly acceptable to the Society.

SIR,

READING lately with attention the publication of the Patriotic Society of which you are Secretary, and thinking a mode of Farming uſed here not yet noted, I take the liberty of ſtating it as applicable in the ſame manner, near moſt towns where the meadow or paſture land is overrun with coarſe, ordinary graſſes; or is, in its form, or from neglect, rough and uneven: our practice here, is, in ſuch caſes, to agree with a gardener for planting the land with potatoes.

The proceſs is, firſt paring, then to dug out a ſmall trench, in which the firſt row of ſets is placed, and then covered by a ſpade's-graft of earth; thus burying the ſurface in continuance, and on which the potatoes are planted with a dibble. The decaying ſods ſerve as a nutriment to the riſing crop, and keep the ſoil light. The gardeners plant the early, or ſecond early potatoes, as paying beſt for immediate uſe; and can afford to give from five to ſeven pounds per acre for the uſe of the land, at the ſame time engaging to keep the ſame well hoed, and to have the crop cleared off in Auguſt.

The ground ſhould then be completely cleaned by ploughing, harrowing, &c. and in the enſuing ſpring ſown with oats or barley; after which, the quantity of ſixteen buſhels of hay-ſeeds, and ten pounds of white clover ſeed, per acre, ſhould be ſown and harrowed in. The crop of corn may be expected good, and nearly with a certainty, in conſequence of the fine tilth of the land; the ſame expectation may be had of the graſs-ſeeds, if they have been properly ſelected. The laſt year, when crops were not generally abundant, on leſs than one acre and three roods, I had eighteen quarters and two buſhels of fine oats, and the promiſe of the graſs ſuch as to ſatisfy the moſt ſanguine hopes; not a vacancy of ſix inches ſquare, if one of three can be found on the whole field, and the crop likely to be from two to two and half tons per acre. As this mode is purſued, not for its paying much preſent profit, but its actual future improvement, and the embelliſhment of the ground, I remark an error which has occurred, by trying (immediately after the potatoes were off) to clean completely and lay down the field with ſeeds; near to a town where land lets dear and manure is eaſily attainable, the general cuſtom is not to be ſparing thereof; and with the freſh dung ſo many of the ſeeds of weeds get introduced, as chickweed, fumitory, fat-hen, and perſicaria, that laid down (after potatoes) with graſs-ſeeds only, its groſſneſs forces up ſo large a quantity of thoſe weeds as to half ruin the firſt crop; which evil is in a great meaſure prevented by the practice of ſowing corn the ſucceeding ſpring, and with it the graſs-ſeeds: the corn thus keeping the weeds out of ſight, and preventing them from ripening their ſeeds, admits the regular graſſes to get ſo good root-hold as to prevent any future intruſion; and no manure ſhould be laid on till the graſs-ſeeds have nearly covered the ſurface, as then there is litle reaſon to fear the weeds ſuch manure might otherwiſe introduce. A ſpeculative farmer (myſelf), with my wheat laſt year, I laid down twenty-three acres with graſs-ſeeds, ſixteen buſhels to the acre, and in the month of April added ten pounds of white clover ſeed per acre: the ground was in fine condition, and the crop of wheat, which at one period promiſed forty to forty-five buſhels per acre, yielded, in conſequence of the ſeaſon, only about thirty-two buſhels per acre; but the ſward has the moſt promiſing appearance, and I think a preference to the graſs-ſeeds ſown with ſpring crops. Of courſe, where opportunity offers, it is a good mode to follow, and, as ſuch, worthy of recommendation. I had purpoſed giving an account of the management of about forty acres of new incloſure; but ſeeing, in the papers of this day, the Agricultural Society's recommendation of potatoes, I thought this mode of introducing that uſeful root might add an additional ſtimulus where it has never yet been practiſed. The paring and digging, which coſts here three pounds twelve ſhillings per acre, gives ſo decided an advantage in the crop by lightening the ſoil, that it is thought to pay the additional expence, and is an uſeful ſource of employment: the ground is afterwards fit for carrots, cabbages, or onions, if ſuch crops are wiſhed for, and any inequalities in the ground are by this means ſoon remedied.

It will give me pleaſure to learn that theſe thoughts may be deemed uſeful; and it is probable that ſome future experiments to be made on a purchaſe of three thouſand five hundred acres (which will ſoon come into my power) may be worthy of communication. Should they prove advantageous, I ſhall be happy in giving an account; and am, with beſt wiſhes for the Society's ſucceſs,

SIR,

Your moſt obedient ſervant,

RICHARD RAMSDEN BRAMLEY.

Leeds,
Feb. 9. 1795.

Mr. MORE.

The Thanks of the Society were given to Mr. JOHN LOCKETT, of Donnington, near Newbury, for his Communication, relative to a Method of increaſing POTATOES, as deſcribed in the following Paper.

SIR,

HAVING lately ſeen in the news-papers various methods propoſed in order to increaſe and multiply Potatoes in the moſt effectual manner, I take the liberty of ſending you an experiment which I have repeatedly made; alſo a method to procure Plants in a very cheap and eaſy way; not after ſuch as the preſent winter, but after a mild winter, when the froſt has penetrated but a ſmall diſtance below the ſurface of the ground.

Firſt, as to the experiment; I took three potatoes, the 17th of December, 1793, 1793, and put them in a ſmall caſk, and placed the caſk in a cellar: the 10th of March, I took off fifteen ſhoots from them, and planted them with a ſetting or dibbling ſtick, in the ſame manner as cabbage plants, about one foot ſquare: the 16th of April, I took twenty-one more ſhoots from the ſame three potatoes, and planted them as before: on the 22d of May, I took twenty-five ſhoots more, and planted them alſo, and then waſhed and boiled the ſaid three potatoes, which proved very good to eat. I had, from the ſaid ſixty-one ſhoots, as many potatoes as weighed ninety-two pounds, notwithſtanding the rooks did me much damage.

My method of procuring plants after a mild winter, is to go (about the month of May) over the fields where potatoes were planted the preceding year, and pull up from among the corn all the ſhoots produced by the potatoes left in the ground the preceding autumn which had eſcaped the digger; and plant theſe ſhoots in the ſame manner as above, *viz.* the ſame as cabbage plants.

I am, SIR,

Your very humble ſervant,

JOHN LOCKETT.

Donnington,
March 1, 1795.

Mr. MORE.

The Thanks of the Society were this Seſſion given to Mr. WILLIAM RANDALL, the Author of the following Paper, reſpecting the FORMING OAKS into COMPASS SHAPES, for the Uſe of Ship-Builders: and the Society, in conſideration of the great advantages that may reſult from having Oaks trained in that manner, have offered Premiums for growing Oaks in Compaſs forms, for the Uſe of Ship-Builders. See Claſs XVII.

SIR,

I MUST firſt beg the Society's pardon for offering to them any agricultural theory; but the following remarks being ſo connected with general obſervations, I cannot (as I could wiſh) confine them to practice only.

From the ſcarcity and very high value of Compaſs-ſhape Timbers, the enormous waſte in his Majeſty's yards, as well as loſs of time in cutting them out from large trees, when not to be had of a natural growth, ex-

exclųſive of the delays occaſioned by the want of trees fit for that purpoſe, I have been led to conſider that the ſhapes might be ſo altered in the infant growth of the tree, as to ſuit the different purpoſes. From the ineſtimable value of the object, and the extreme length of time which muſt elapſe before the full advantages of theſe improvements can be obtained, I was induced to make ſome trials, to prove what was likely to be effected.

By the figures annexed *(ſee the cut)*, and from ſtrict obſervations on effects inadvertently produced from ſomewhat ſimilar cauſes, I have concluded that the deſign might be accompliſhed; and have taken the liberty of ſubmitting this paper to the ſuperior judgment of the Society, by whom more perfect plans may be formed; and, if it meets their approbation, may be conveyed, through their extenſive channel of information, to the country at large. Humbly preſuming on the candour of the Society, to excuſe thoſe imperfections which from inexperience in literary communications may herein appear, I beg leave to ſubſcribe myſelf,

Your moſt obedient humble ſervant,
WILLIAM RANDALL.

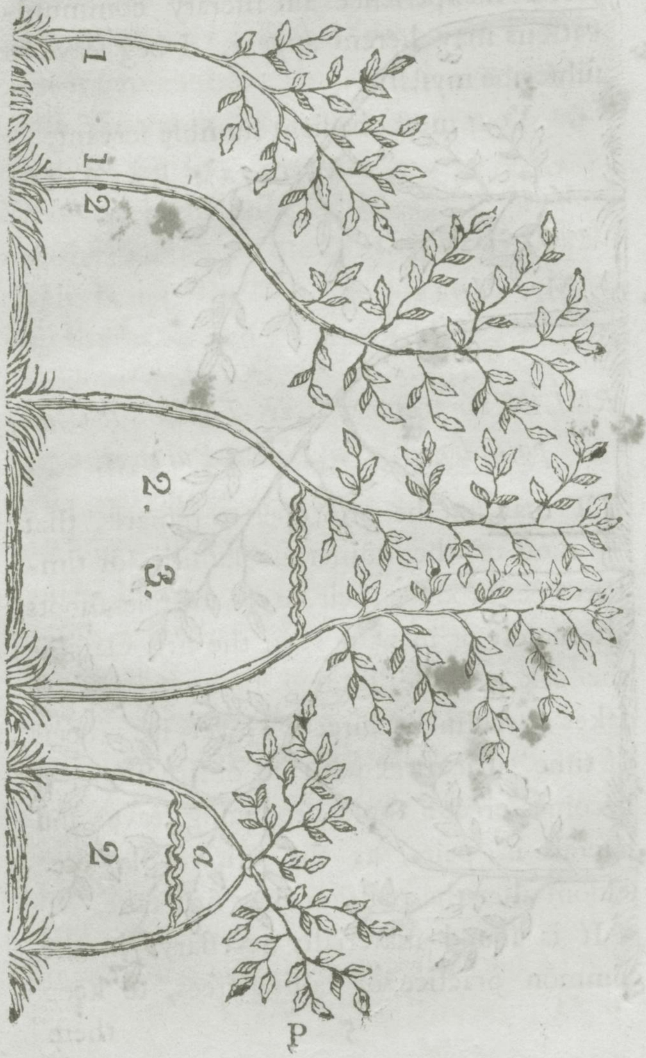
Maidſtone,
January 21, 1795.

Mr. MORE.

RULES for training OAK TREES to Compaſs Shapes, for Naval Purpoſes.

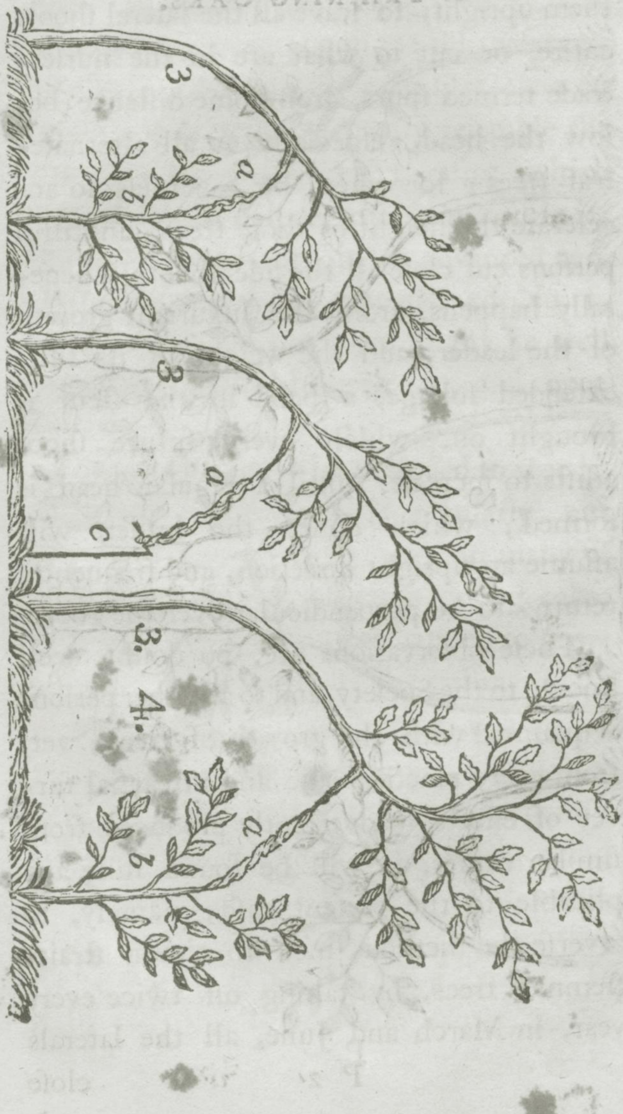
IT may not be improper to remark, that moſt of the numerous families of timber-trees produce their leaves and ſide-ſhoots alternately or in pairs: in the firſt claſs is the oak, whoſe leading ſhoot frequently takes a reclining direction; yet in proceſs of time, if it meet with no obſtructions, it becomes erect: thoſe producing leaves and laterals in pairs, as the aſh, maple, &c. ſeldom alter the poſition they firſt take.

It is found materially neceſſary, in the common practice of raiſing trees, to keep them



CUT, No. 1, of Mr. RANDALL's Method of TRAINING OAKS.

CUT, No. 2, of Mr. RANDALL's Method of TRAINING OAKS.



them upright, to leave all the lateral ſhoots entire, or cut to what are in the nurſery trade termed ſpurs, from ſome diſtance below the head, eſpecially on all alternate-leaf trees; for when, by eagerneſs to accelerate the height of thoſe trees, unſkilful perſons cut cloſe all the ſide-ſhoots, it generally happens, from the luxuriant growth of the leader, and the weight of its full-extended foliage, a bend in the ſtem is brought on, which every future ſhoot aſſiſts to increaſe, until a regular head is formed; which done, the leader will aſſume an upright direction, and frequently returns to be perpendicular over the root.

Theſe obſervations are, no doubt, well known to the Society, and to all other perſons acquainted with the growth of trees; yet, from every practical rule and impartial ſurvey of effects inadvertently produced from ſimilar cauſes, it will be found fully applicable to the preſent caſe; namely, to reverſe the methods uſed to obtain ſtrait-ſtemmed trees, by taking off twice every year, in March and June, all the laterals cloſe to the ſtem; beginning, when about eight feet high, and continue till twenty or more feet. This will cauſe the Oak-trees on which it is practiſed to nearly reſemble the form No. 1 (ſee the cut); after which time, if left to nature, the ſtem will in its regular courſe aſſume, in an advanced age, a form ſomewhat like that marked No. 1, 2. This part of the plan might be well adapted to parks, hedge-rows, and open plantations.

The next part may be extended to woods, and where underwood is regularly cut every fifteen or twenty years; in many of which are numbers of clean young oaks. Wherever two kindly trees happen to grow ſo near as to be brought (by pulling down the heads with a ſtick having a hook at one end) to reach each other, a ſtrong branch from towards the top may be gently twiſted (ſo as not to deſtroy its growing faculties), and joined together by a wove, which keeps the ſtems in the poſition ſhewn, and reſembles the form No. 2. It is, by referring to common cauſes, to be concluded that each leader will purſue an upright courſe, which will cauſe the future appearance to reſemble No. 2, 3.

In either of the above-mentioned ſituations, where there are ſingle trees that cannot be brought to join with others of the ſame kind, and the firſt plan not approved of, any ſpecies of wood might anſwer the purpoſe, by cutting it of the height required, and bringing the branch from the Oak down to it, then faſtening it by a nooſe eaſily made by twiſting the branch as before: in default of a neighbour grower, a ſtrong ſtake with a hooked end would endure three or four years, and anſwer the purpoſe of confining the tree (ſee No. 3): its future growth will be likely to incline upward, and in time to form a ſhape nearly as No. 3, 4. None of theſe proceſſes are expenſive: the two laſt plans, I find, can be done in ten minutes each tree: it can be only a trifling obſtruction to the growth. Its ſuperior advantages will be found in woods, where, at the following fall or any future period, thoſe that fail to form ſo deſirable a ſhape as in the opinion of a judicious wood-reef is neceſſary, may be taken down, with little difference in their value, had they been left to a natural courſe.

From the age of eight to fourteen years, if free growers, or about the ſame number of feet in height, I find is the moſt convenient time to fix them, according to the different deſigns. The ſpring before the leaf comes out, I alſo find the beſt ſeaſon for twiſting the branches, or any reduction of them.

It would, I preſume, be needleſs to point out which are the moſt valuable bends in Oak timber; as alſo to refer to atteſtations of the natural trees reſembling the forms which are in the cut annexed, and intended only to convey the ideas of the deſign. The concluſions drawn impartially from natural products, I judged eſſentially neceſſary to take a full view of the effects; which ſmall deviation from the Society's rules of admitting practicable communications only, will, I truſt, be excuſed, from the particular circumſtances of the caſe.